

TECHNICAL ANALYSIS DOCUMENT FOR
THE PREVENTION OF SIGNIFICANT DETERIORATION PERMIT
PSD 97-01 AMENDMENT 1
WEYERHAEUSER NORPAC COMPANY
NETTING ANALYSIS PROJECT
COWLITZ COUNTY, WASHINGTON
February 12, 2004

1. INTRODUCTION

1.1 THE PERMITTING PROCESS

1.1.1 The Prevention of Significant Deterioration Process

The Prevention of Significant Deterioration (PSD) requirements are established in Title 40, Code of Federal Regulations (CFR), and Part 52.21. Federal rules require PSD review of all new or modified stationary sources that meet certain overall size, and pollution rate criteria. The objective of the PSD program is to prevent serious adverse environmental impact from emissions into the atmosphere by a new or modified stationary source. The program limits degradation of air quality to that which is not considered “significant” as defined by the federal regulations listed above. PSD rules require that an applicant utilize the most effective air pollution control equipment and procedures after considering environmental, economic, and energy factors. The program sets up a mechanism for evaluating and controlling air emissions from a proposed source to minimize the impacts on air quality, visibility, soils, and vegetation.

The Washington State Department of Ecology (Ecology) has been delegated the authority by the Environmental Protection Agency (EPA) Region X, to implement the PSD program in Washington State. The authority to issue this permit comes from Chapter 173-400 Washington Administrative Code (WAC), specifically WAC 173-00-141 and the Washington State Clean Air Act Chapter 70.94 Revised Code of Washington (RCW).

1.2 THE PROJECT

1.2.1 The Site

The existing Kraft mill was constructed in 1948 and expanded in 1956 and 1992. The Longview pulping and paper-making facilities are among the largest in the world, producing nearly 1.2 million tons per year of intermediate and final paper products. This facility uses the Kraft and thermo-mechanical and de-ink (recycle) pulping processes to produce various types of pulp. The pulp produced from these operations is used on four millsite paper machines. These paper machines produce two basic types of products: bleached paperboard used to manufacture food grade liquid packaging (principally milk cartons) and newsprint.

The NORPAC facility consists of three newsprint paper machines, a thermo-mechanical pulping (TMP) process, and a de-inking process and their associated exhausts. No. 3 Paper Machine and the de-inking operation are part of the NORPAC III phase of development, did not involve a significant emissions increase, and are therefore not part of the PSD application.

There are three supplies of fiber for the paper machines: the pulp produced in the TMP process, semi-bleached Kraft market pulp, and recycled fiber from old newsprint. The TMP process uses wood chips as the feedstock. The chips are washed, pneumatically fed to four chip cyclones, conveyed to nine chip surge bins, fed through one of nine rotary valves, preheated in the steaming tubes, each of which is paired with a refiner. In the primary and secondary refiners, the chips are ground to a pulp by counter-rotating disks. Heat recovery loops have been installed at NORPAC to recover the heat generated in the refining process. The exhausts from these heat recovery systems are the No. 2 de-ink spray condenser, and the startup scrubber. After the pulp is ground and screened, the pulp is bleached to the desired brightness between the primary and secondary refiners. There are two bleaching towers; each is exhausted from a vent. The rest of the TMP process prepares the pulp for application in the paper machines through a series of screens, dilutions, and pulp storage steps. TMP pulp is blended with purchased Kraft, de-ink, and recycled broke pulp.

Paper Machines 1 and 2 are very similar, with each having similar exhausts to the atmosphere. The pulp sheet is sent through the press section of the paper machine, where the excess water is squeezed out of the newly formed sheet while a vacuum is applied across the sheet to literally suck the water out of the sheet. The emissions from this process are exhausted through the Vacuum Trench exhaust. After the press section, the sheet is sent through the natural gas-fired air cap dryers, where hot air is blown against the top of the sheet to continue the drying process. Air cap dryer #1 has three emission locations; air cap dryer #2 has a single combined exhaust vent. After the air cap, the sheet is directed through multiple sections of a steam-heated dryer. Each machine has several dryer sections (six on PM#1, seven on PM#2), each with an exhaust, and one BelVent roll, with its own exhaust.

1.2.1 The Project

In 1996, NORPAC submitted a PSD application which ultimately resulted in the issuance of PSD-97-01. In the 1996 application, NORPAC estimated that the NORPAC I & II would produce 540,000 air-dried metric tons (ADMT) of paper each year. They went on to explain that 25,000 ADMT would be attributed to high brightness paper production with the remaining 515,000 ADMT attributed to normal brightness paper. Subsequently permitted projects (TMP Screen Improvements Project and PM#2 Rebuild Project) improved process reliability and resulted in increased TMP pulp and paper production.

Today NORPAC is requesting authorization to increase the production of High Brightness paper from a permitted 25,000 ADMT to 623,685 ADMT. It is important to point out that NORPAC has always been able to produce high brightness paper. Today's proposed modification is in response to market demand and would allow NORPAC to produce more of what they already are allowed to produce.

1.3 NEW SOURCE PERFORMANCE STANDARDS and NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS

New Source Performance Standards (NSPS) apply to certain types of equipment that are newly constructed, modified, or reconstructed after a given applicability date. The National Emission Standards for Hazardous Air Pollutants (NESHAP) apply to categories of equipment with hazardous air pollutant emissions. The applicability of the following NSPS and NESHAPs are presented below:

1.3.1 New Source Performance Standards

The NORPAC projects do not contain processes or equipment that is subject to a NSPS; therefore, NSPS regulations **are not** applicable.

1.3.2 National Emission Standards for Hazardous Air Pollutants

The NORPAC projects do not contain processes or equipment covered by a NESHAP; therefore, NESHAP regulations **are not** applicable.

1.4 THE PSD APPLICATION

NORPAC submitted a PSD application on May 30, 2003. The application was found to be incomplete on June 30, 2003. The applicant submitted additional information on September 25, 2003, October 2, 2003, November 21, 2003, and December 13, 2003. The application was found to be complete on December 22, 2003.

1.5 PSD APPLICABILITY

This stationary source will is a major modification for emissions of volatile organic compounds (VOC) and carbon monoxide (CO) because:

- NORPAC is one of the 28 listed industries that becomes a "major source" when emitting more than 100 tons per year of any regulated pollutant.
- Existing emissions of VOC and CO from the stationary source are each greater than 100 tons per year.
- Proposed increases in emissions of VOC and CO are above the PSD significance rates of 40 and 100 tons per year respectfully.

- The site of the proposed project is in an area which has been designated as in attainment with national and state ambient air quality standards for all pollutants.

Therefore, the NORPAC Project is subject to PSD review and will be permitted in accordance with the requirements contained in 40 C.F.R. 52.21.

1.6 EMISSIONS AND EMISSION CONTROL

A stationary source's potential or allowable emissions are used to evaluate emissions. Potential emissions, or a source's Potential to Emit (PTE), are based on the theoretical operation of a facility 24 hours per day, 365 days per year (8,760 hours per year), or on some other physical limitation of the equipment. In many cases the number of hours a source would actually operate is lower than its potential emissions. If the source does not intend to operate at its maximum capacity, it may request a federally enforceable limit on the hours of operation, or some other measurable parameter. This limit, if placed in a federally enforceable permit, would result in "allowable" emissions as opposed to potential emissions.

Existing emissions from this facility are 9,636 pounds per day and 830 tons per year of VOC's in addition to the 81 tons per year of CO. The proposed emission limits are 6,448 pounds per day and 927.3 tons per year for VOC's in addition to the 891.4 tons per year of CO. As you can see there is a decrease of 3,188 pounds per day of VOC emissions, an increase of 97.3 tons per year of VOC emissions, and an increase of 810.4 tons per year of CO. While there is an annual increase in emissions, the project "nets out" of PSD review. Please see the discussion below about netting.

1.6.1 Federally Enforceable Limitations

NORPAC has elected to take a federally enforceable limitation on the annual tonnage of VOC emissions from TMP 1 and 2, as well as paper machine 1 and 2.

Proposed emissions from this project are shown in Tables 1 and 2 below:

Table 1. NORPAC I and II VOC Emission Factors for High Brightness Production, Daily and Annual Emissions Rates

Equipment	Estimated Maximum Production Rate (daily)	Maximum Production Rate (yearly)	Emission Factor	VOC Emissions (Pounds per Day)	VOC Emissions (Tons per Year)
TMP # 1	Pulp production, 830 (BDMT/day)	Pulp production, 271,059 (BDMT/year)	1.489 (lb/BDMT)	1,243	203.1
TMP # 1 Reboiler Down	Pulp production, 830 (BDMT/day)	Pulp production, 13,553 (BDMT/year)	0.241 (lb/BDMT)	200	1.6
TMP # 2	Pulp production, 800 (BDMT/day)	Pulp production, 271,059 (BDMT/year)	1.498 (lb/BDMT)	1,198	203.1
TMP # 2 Reboiler Down	Pulp production, 800 (BDMT/day)	Pulp production, 13,553 (BDMT/year)	0.241 (lb/BDMT)	193	1.6
PM # 1	Gross Product, 1,000 (ADMT/day)	Gross Product, 270,000 (ADMT/year)	1.661 (lb/ADMT)	1,661	224.2
PM # 2	Gross Product, 1,200 (ADMT/day)	Gross Product, 353,685 (ADMT/year)	1.661 (lb/ADMT)	1,993	293.7
TOTAL VOC EMISSIONS				6,448	927.3

Table 2. NORPAC TMP II CO Emission Factors and Annual Emission Rates

Equipment	Maximum Production Rate	Emission Factor	CO Emissions (Tons per Year)
TMP # 1	Pulp production, 271,059 (BDMT/year)	3.284 (lb/BDMT pulp)	445.1
TMP # 2	Pulp production, 271,059 (BDMT/year)	3.284 (lb/BDMT pulp)	445.1
PM # 1	360 (MMcuft/year)	3.45 (lb/MMcuft Natural Gas)	0.6
PM # 2	321 (MMcuft/year)	3.45 (lb/MMcuft Natural Gas)	0.6

1.6.2 Netting Analysis

NORPAC has elected to net out of PSD for emissions of VOC, and CO. Netting is a process in which all contemporaneous emission increases and decreases are summed for the previous five years prior to beginning construction plus the time from beginning construction to beginning normal operation. If the source can show that emissions have actually decreased over the contemporaneous period then PSD review is not required provided those emissions meet the requirements of being creditable and the reductions are federally enforceable.

NORPAC was issued an Emission Reduction Credit (ERC) for the shutdown of East Powerhouse Shutdown on September 4, 1998. The actual shutdown occurred on June 1, 1998. Historically, Ecology used ERC's to track emission reductions. We amended our rule (Chapter 173-400-WAC) to remove the need to surrender ERC's for netting purposes on September 15, 2001. In addition to removing the requirement to surrender ERC's the contemporaneous period was changed from ten years to five in order to be consistent with the federal rules.

The PSD application was submitted within 5-year contemporaneous period following either of the June 1, 1998 (East Powerhouse shutdown) or the September 4, 1998 (ERC issuance) dates. Ecology therefore has determined that the reductions are creditable.

Ecology's interpretation of the PSD rules and EPA guidance documents are that if the project is able to "net out" of PSD review there is no Best Available Control Technology (BACT) or ambient impact analysis required. This interpretation is based upon 40 CFR 52.21(j)(3). Which states: *"A major modification shall apply best available control technology for each pollutant subject to regulation under the Act for which it would result in a significant net emissions increase at the source. This requirement applies to each proposed emissions unit at which a net emissions increase in the pollutant would occur as a result of a physical change or change in the method of operation in the unit"*.

If the netting analysis results in an emission increase of less than the significance levels, the project is not a major modification and is not subject to PSD review.

An ambient impacts analysis was performed in 1996 using the information contained in the application for PSD-97-01. An Ozone analysis was also performed. These analyses indicated that there were no unacceptable ambient impacts.

NORPAC stated that since this project is only a change in the method of operation, they have already commenced construction and operation of the facility and that netting should be allowed. Ecology concurs with this statement.

Figure 1 below, shows the contemporaneous period.

Figure 1: NORPAC Contemporaneous Period

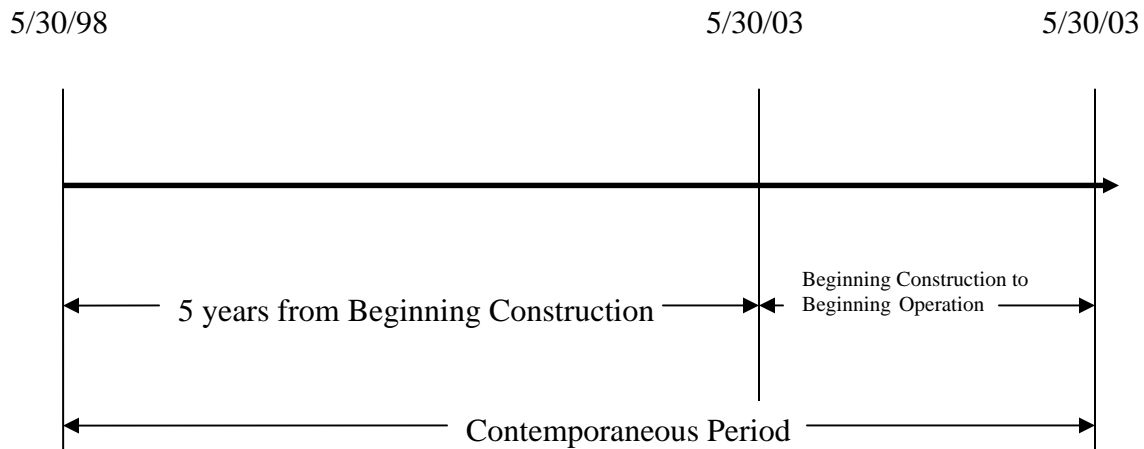


Table 3 lists the projects and their emission changes over the contemporaneous period (5/30/98 – 5/30/03).

Table 3: NORPAC Project Contemporaneous Changes

Year	Project Name	Creditable Emissions Increases & Decreases (tpy)	
		VOC	CO
1998	East Powerhouse Shutdown	(170.00)*	(1,651.0)*
1998	Kraft Mill Modernization PSD Update	0.0	0.0
2000	Package Boiler 8N Shutdown	(0.03)**	(16.5)**
2000	NORPAC PM No. 1 Sectional Drive	1.9	0.0
2000	NORPAC PM No. 1 Flat Box	0.9	0.5
2000	Saltcake Receiving & Storage	0.0	0.0
2001	NORPAC Deink Improvement Project	0.9	0.0
2001	NORPAC PM No. 2 Dryer Improvements	1.0	0.0
2001	Kraft Optimization Project	3.9	0.0
2003	Request for Permit Change PSD-97-01	97.3	810.4
Net Emission Change		(64.1)	(856.6)
PSD Significance Level		40	100
Exceeds Significance Level		No	No
PSD Review Required		No	No

* East Powerhouse ERC's were issued in Order No. DE98-AQ-1049

** Package Boiler 8N ERC's were issued in Order No. DE00-AQIS-1427

Since the net emission increase of VOC's (-54.2) and CO (-853.9) are below the PSD significance rates 40 tons per year and 100 tons per year respectfully, no BACT review will be required. Because the net emissions increases from this project are below the significance rates, a control technology review is not required (40 CFR 52.21(j)(3).) The emissions were analyzed in PSD-97-01. Therefore, the source impact analysis was not repeated.

2.0 DETERMINATION OF BEST AVAILABLE CONTROL TECHNOLOGY AND LOWEST ACHIEVABLE EMISSION RATE

2.1 DEFINITIONS

Best Available Control Technology (BACT) is an emission limitation based on the most stringent level of emission control applied at similar sources that are technically and economically feasible.

In a BACT analysis, the applicant must rank all control options from highest level of control to the lowest. If the applicant can show that the highest level of control is technically or economically infeasible for the proposed source then the next most stringent level of control is evaluated. Ultimately, the burden is on the applicant, to prove why the most stringent level of control should not be used.

Lowest Achievable Emission rate (LAER) is defined as the most stringent emission limitation that has been applied to a source or is contained in the implementation plan of any state for such class or category of source, unless the owner or operator of the proposed source demonstrates that such limitations are not achievable.

In no event shall a LAER analysis permit a proposed new or modified source to emit any pollutant in excess of the amount allowable under applicable new source performance standards.

2.2 REGULATORY REQUIREMENTS

Federal and state laws require an applicant to use BACT for any pollutant that will have a significant emission increase at any PSD or NOC source. An applicant is required by Washington State regulations, to use BACT for any pollutant that will have increased emissions, provided that the emission unit was physically modified. BACT applies to this new source because the term "modification" includes brand new sources. This project does not result in a net significant emission increase for any pollutant regulated by PSD. Therefore, there is no BACT review required.

4.0 AMBIENT AIR QUALITY ANALYSIS

4.1 REGULATED POLLUTANTS

PSD rules require an assessment of ambient air quality impacts from any facility emitting pollutants in significant quantities. Limiting increases in ambient concentrations to the maximum allowable increments prevents significant deterioration of air quality. Since the Ambient impacts were evaluated in PSD-97-01 that analysis has not been reproduced.

4.2 TOXIC AIR POLLUTANTS

PSD rules require the applicant to consider emissions of toxic air pollutants during the course of BACT analysis. One reason for this requirement is to ensure that the source does not employ an emission control technique that controls the main pollutant of concern but emits a new toxic air pollutant in serious quantities. A Toxic Air Pollutant (TAP) analysis was performed by Ecology's Industrial Section. There are no increases in TAP's that require New Source Review Permitting.

5.0 AIR QUALITY RELATED VALUES

5.1 IMPACTS ON VISIBILITY

There was no visibility impact analysis performed for this project.

5.2 OTHER AIR QUALITY RELATED ISSUES

Emissions of VOC's are above the 100 ton per year threshold. Clint Bowman (Ecology's Air Quality Dispersion Modeling specialist) has confirmed that the elements of an ozone analysis were adequately addressed in PSD-97-01.

5.3 CONSTRUCTION AND GROWTH IMPACTS

The proposed project is not expected to cause adverse construction and growth-related impacts.

5.4 IMPACTS ON SOILS AND VEGETATION

The proposed project is not expected to cause or contribute to any violation of the NAAQS. As such, this project should not cause any impacts on soils and vegetation.

6.0 CONCLUSION

The project will have no significant adverse impact on air quality. The Washington State Department of Ecology finds that the Applicant, Weyerhaeuser NORPAC, has satisfied all requirements for netting out of PSD.

For additional information please contact:

Mr. Richard B. Hibbard
Project Manager
Washington State Department of Ecology
P.O. Box 47600
Olympia, WA 98504-7600
(360) 407-6896
rhib461@ecy.wa.gov